

Glass Passivated Ultrafast Rectifier

Major Ratings and Characteristics

$I_{F(AV)}$	2.0 A
V_{RRM}	100 V to 200 V
I_{FSM}	50 A
t_{rr}	35 ns
V_F	0.95 V
I_R	2.0 μ A
T_j max.	175 °C



DO-204AC (DO-15)

Patented*

* Glass Encapsulation technique is covered by Patent No. 3,996,602, brazed-lead assembly to Patent No. 3,930,306

Features

- Cavity-free glass-passivated junction
- Ultrafast reverse recovery time
- Low forward voltage drop
- Low leakage current
- Low switching losses, high efficiency
- High forward surge capability
- Meets environmental standard MIL-S-19500
- Solder Dip 260 °C, 40 seconds



Mechanical Data

Case: DO-204AC, molded epoxy over glass body
Epoxy meets UL-94V-0 Flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

Polarity: Color band denotes cathode end

Typical Applications

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer, automotive and Telecommunication

Maximum Ratings

$T_A = 25$ °C unless otherwise specified

Parameter	Symbol	FGP20B	FGP20C	FGP20D	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	100	150	200	V
Maximum RMS voltage	V_{RMS}	70	105	140	V
Maximum DC blocking voltage	V_{DC}	100	150	200	V
Maximum average forward rectified current 0.375" (9.5 mm) lead length at $T_L = 75$ °C	$I_{F(AV)}$	2.0			A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	50			A
Operating junction and storage temperature range	T_J, T_{STG}	- 65 to + 175			°C

Electrical Characteristics

$T_A = 25\text{ }^\circ\text{C}$ unless otherwise specified

Parameter	Test condition	Symbol	FGP20B	FGP20C	FGP20D	Unit
Maximum instantaneous forward voltage	at 2.0 A	V_F	0.95			V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^\circ\text{C}$ $T_A = 100\text{ }^\circ\text{C}$	I_R	2.0 50			μA
Maximum reverse recovery time	at $I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $t_{rr} = 0.25\text{ A}$	t_{rr}	35			ns
Typical junction capacitance	at 4.0 V, 1 MHz	C_J	45			pF

Thermal Characteristics

$T_A = 25\text{ }^\circ\text{C}$ unless otherwise specified

Parameter	Symbol	FGP20B	FGP20C	FGP20D	Unit
Typical thermal resistance ^(1, 2)	$R_{\theta JA}$ $R_{\theta JL}$	60 20			$^\circ\text{C/W}$

Notes:

(1) Thermal resistance from junction to ambient 0.375" (9.5 mm) lead length mounted on P.C.B. with 0.5 x 0.5" (12 x 12 mm) copper pads.

(2) Thermal resistance from junction to lead at 0.375" (9.5 mm) lead length with both leads attached to heatsinks

Ratings and Characteristics Curves

($T_A = 25\text{ }^\circ\text{C}$ unless otherwise specified)

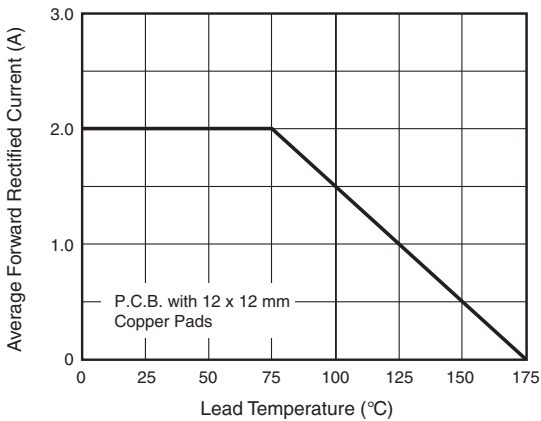


Figure 1. Maximum Forward Current Derating Curve

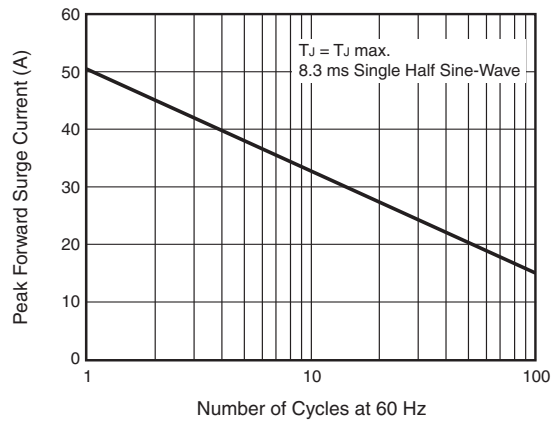


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

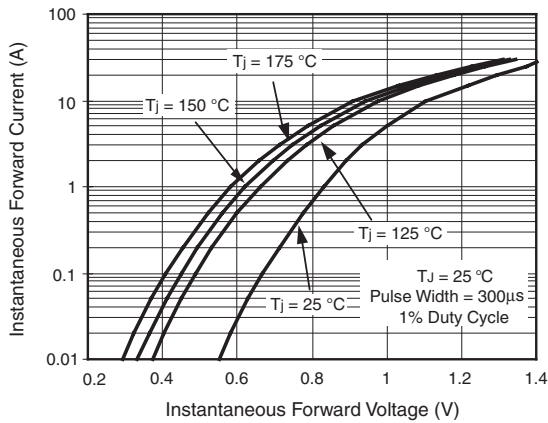


Figure 3. Typical Instantaneous Forward Characteristics

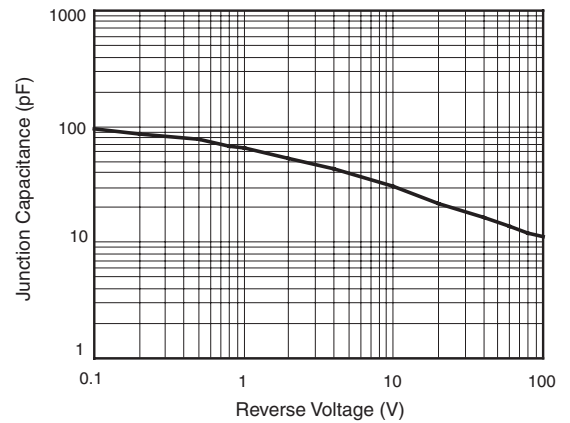


Figure 5. Typical Junction Capacitance

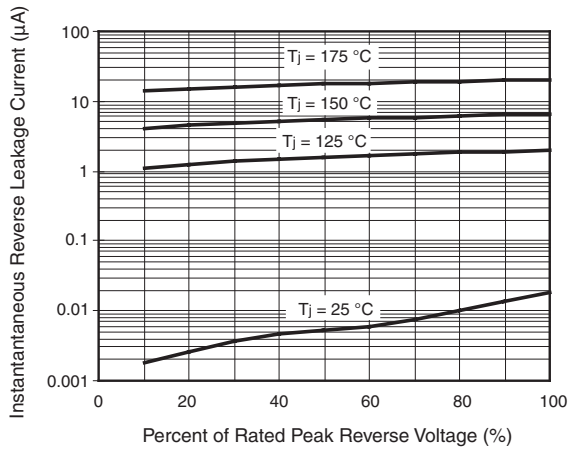


Figure 4. Typical Reverse Leakage Characteristics

Package outline dimensions in inches (millimeters)

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